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ARCHIVES OF PEDIATRICS

A MONTHLY DEVOTED TO THE

DISEASES OF INFANTS AND CHILDREN

JOHN FITCH LANDON, M.D., Editor

LEADING ARTICLES IN THIS NUMBER

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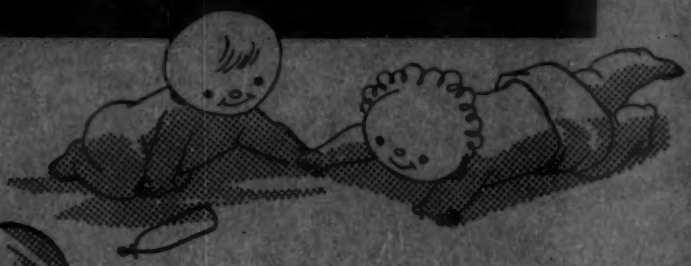

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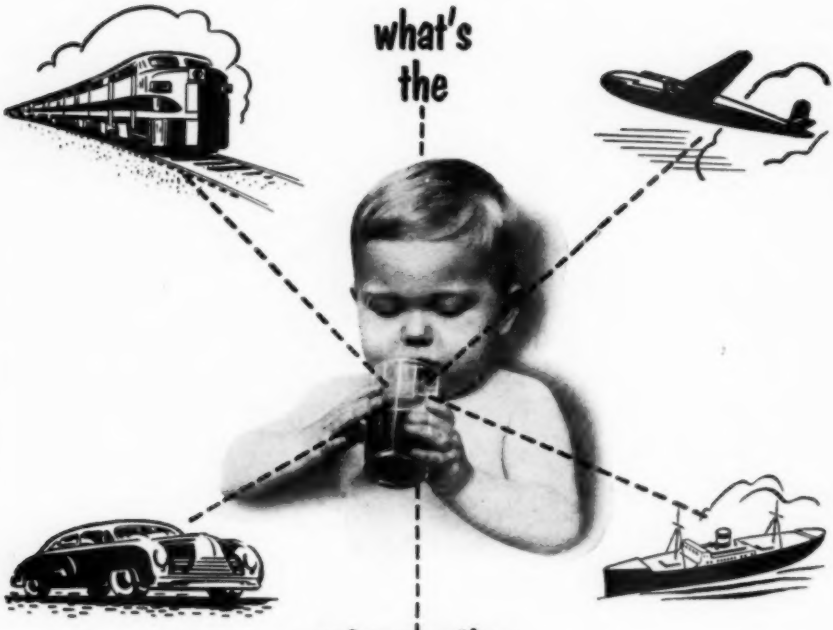

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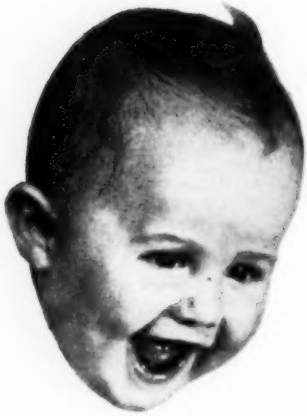

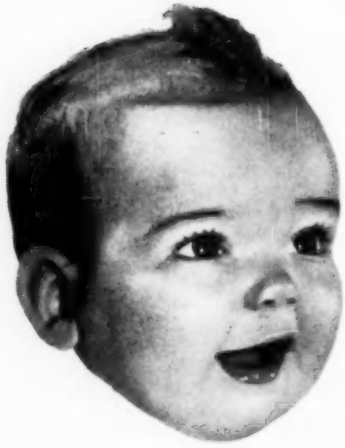

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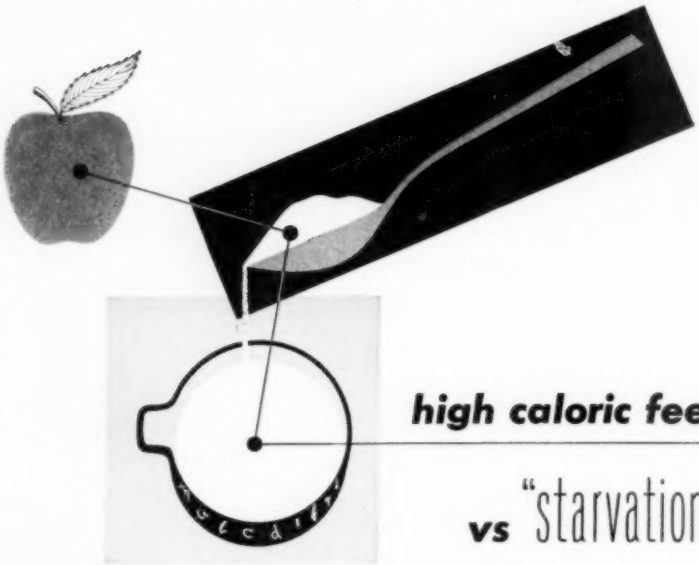

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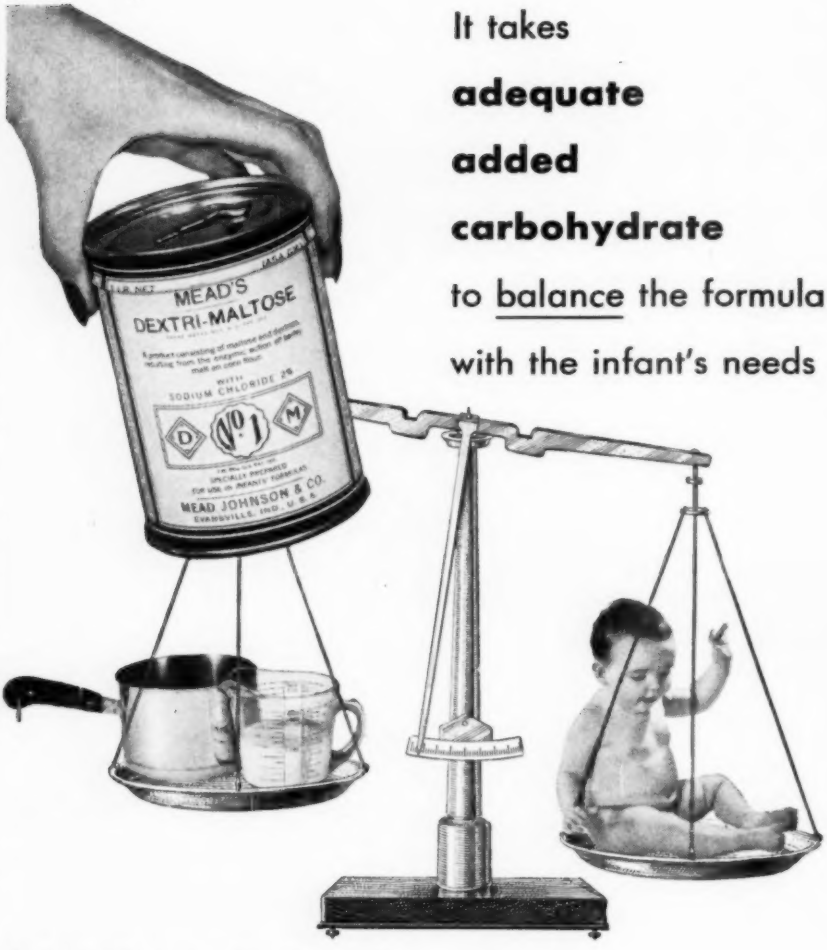

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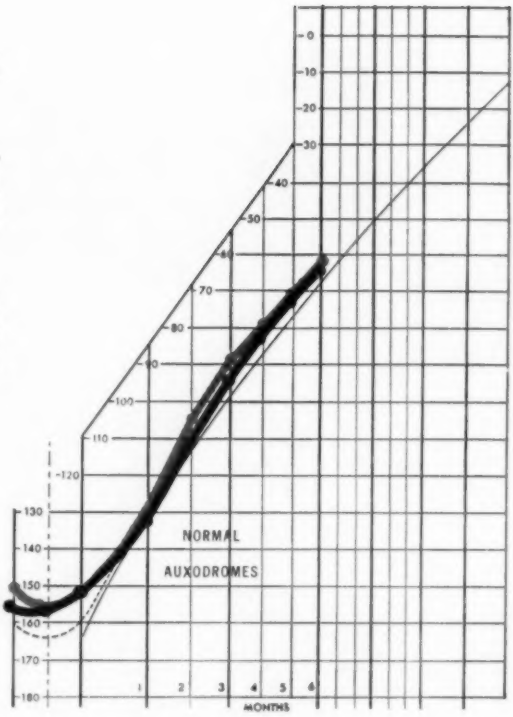

1. Wetzel, N. C.: J. Pediat. 29:439, 1946.
2. Jackson, R. L., and Kelly, H. G.: J. Pediat. 27:215, 1945.

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ARCHIVES OF PEDIATRICS

VOL. 68 AUGUST 1951 No. 8

JOHN FITCH LANDON, M.D., Editor

POLIOMYELITIS IN A PAIR OF IDENTICAL TWINS*

REPORT OF CASES

ROBERT R. HAUMEDER, M.D.

Berkeley, Calif.

Reports of the appearance of paralytic poliomyelitis in two or more members of the same family have appeared occasionally[1-4], but its appearance in identical twins has been reported only rarely.[5,6]

The following case histories are those of a pair of five-year-old identical twin boys who developed similar forms of paralytic poliomyelitis.

CASE REPORTS

Case 1. J. K., age 5, was admitted to the hospital on November 11, 1950, with a history of a mild cold for one week. Twenty-four hours before admission he complained of headache, nausea, vomiting and fever; a flaccid paralysis of the right arm had been present about twelve hours. There was a history of an otitis media a month before entry which had been treated with oral penicillin for two days. The patient had been vaccinated two weeks before admission, resulting in a primary take.

The patient was a well-developed, well-nourished, white male who appeared acutely ill. There was marked nuchal rigidity; the pharynx was acutely inflamed. There was a good gag reflex and

*Reported from the Department of Pediatrics, Highland-Alameda County Hospital, Oakland, Calif., A. L. Gleason, M. D., chief of service.

no dysphagia. Heart and lungs were normal; diaphragm and intercostal muscles were functioning normally. Neurological examination revealed normal superficial reflexes, intact cranial nerves and positive Kernig's and Brudzinski's signs. Deep tendon reflexes were normal, except those of the right arm. There was complete paralysis of the right arm and only feeble flexion and extension of the right hand. Muscles of the back and the hamstrings were in moderate spasm.

Spinal fluid on admission showed normal pressure; there were 183 leukocytes with 76 per cent lymphocytes. Sugar and chlorides were normal.

By noon of the second day his temperature was 103° F. and the right hand was completely paralyzed. In the evening the left arm had lost the power of flexion, extension, pronation and supination; abduction and adduction were very weak. Intercostals, diaphragm and pharyngeal muscles were normal. By 10 P.M. the patient was beginning to have some respiratory distress and using his accessory muscles of respiration. No dysphagia nor accumulation of mucus was present. Three hours later marked weakness of the intercostals and diaphragm were noted and the patient was placed in a respirator and oxygen was started. The temperature remained elevated to 101.5° F. There was marked restlessness during the third hospital day and he began having excessive nasopharyngeal secretions which required suctioning every few minutes. The airways remained adequate; temperature remained at 101° F. On the fourth hospital day he was drowsy and gradually lapsed into coma. He received two units of pooled, irradiated plasma and 1,000 cc. fluids parenterally. He declined rapidly and died at 10 P.M. on the fourth day, in apparent respiratory failure. Autopsy was not performed.

The patient was treated with hot packs during his entire hospitalization and received Priscoline, 50 mgm. every four hours, the last two days of his illness.

Case 2. D. K., age 5 and the identical twin brother of J. K., was admitted the afternoon of November 22, 1950 with a history of fever, headache, nausea and vomiting for the past day. He had been entirely well for several months. Vaccination on October 31, 1950 had resulted in a primary take.

The patient was a well-developed, well-nourished, white male

who appeared moderately ill and was unable to move his right arm. Temperature was 101.4° F., pulse 130. There was marked nuchal rigidity; the pharynx was acutely inflamed. The gag reflex was normal; there was no dysphagia. Superficial reflexes were normal; no cranial nerve palsies were noted. Kernig's and Brudzinski's signs were positive. Deep tendon reflexes were normal, except those of the right arm. The muscle weakness of the right arm was exactly the same as in his twin brother on admission. There was moderate spasm of the back and hamstrings and the remainder of the examination was normal.

Spinal fluid pressure was normal, there were 281 leukocytes with 24 per cent lymphocytes.

The patient received one unit of plasma immediately and was started on Priscoline and oxygen.

On the following day his temperature was 100° F. His right arm and hand were completely paralyzed and there was beginning involvement of the left upper arm. The temperature rose to 102° F. on the afternoon of the second hospital day; two more units of plasma were given and no further progression of paralysis was noted.

Temperature was 100° F. on the third hospital day; degree of paralysis remained about the same. He again received two units of plasma.

On the fourth day the patient was feeling well; he had normal temperature. On the sixth day, slight improvement of function of the left arm was noted and the spasm of the back and hamstrings was decreasing.

The patient was discharged to a private physician on the eighth hospital day for further physiotherapy. There was only slight weakness of the left arm but the right arm was still completely paralyzed. Three weeks after discharge the patient has recovered full use of the left arm but the right remains paralyzed.

DISCUSSION

The possibility of a hereditary tendency to develop poliomyelitis and paralytic poliomyelitis has been mentioned before.[7]

If such a tendency exists it would be even more likely to appear in identical twins; with a similar onset one might well expect a similar course in such cases. Our cases were so similar in onset that most

of us shared the patients' deep anxiety over the probability of a similar outcome in the second twin.

At the time of admission of the first patient, we were not routinely treating poliomyelitis patients with plasma, reserving it for those deemed more seriously ill. This was the reason for not giving it earlier to the first patient. Because we were so anxious to do everything possible for the second patient, it was started so early in him.

Exactly how much difference in therapy affected the outcome in the second case cannot be determined; had plasma been withheld till the fourth day would the second twin have succumbed? There is a definite possibility that the plasma did have some beneficial effect although the presence of antibodies has been fairly well ruled out by some investigators.

A recent report on poliomyelitis[8] mentions the use of plasma and, although the authors could not show any statistical proof of its efficacy, they state that on clinical impression it often seems to be of definite benefit.

We feel that plasma played a part in halting the progression of symptoms and further believe that it should be used in all cases and used early.

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PEPTIC ULCER IN CHILDHOOD*

Report of Six Cases

James B. Gillespie, M.D.

and

Helen E. Bliss, M.D.

Urbana, Ill.

Reports of the occurrence of gastric and duodenal ulcer in infancy and childhood have been relatively infrequent. In 1941 Bird, Limper and Mayer[1] reviewed 243 previously reported cases. These authors suggested that cognizance of the occurrence of peptic ulcer in childhood and more frequent use of roentgenologic studies in patients of the younger age groups may make the diagnosis of inflammatory lesions of the gastro-intestinal tract less rare.

Ulcers, both single and multiple, may occur in the stomach or duodenum of children at any age. Approximately 37 per cent of cases have been observed in children less than one year of age and the age of lowest incidence is between one and nine years.[1] The higher incidence in males than females at all ages has been frequently noted.

Consideration of duodenal ulcer is more or less inseparable from gastric ulcer and points of similarity between the two are numerous. The ratio of duodenal ulcer to gastric ulcer (in adults) varies in different countries, and in the United States is 12:1[2]. In children this ratio is 3:1 or greater.

Sturtevant and Shapiro[3] reported five cases of gastric ulcer in children in 7,219 necropsies. From 1906 to 1925 in 8,360 peptic ulcers observed at the Mayo Clinic, Procter[4] found only three in children. Two were duodenal ulcers and one was gastric. Schmidt[5] noted 17 peptic ulcers in 2,715 post-mortem examinations on children in the second year of life or older. Berglund,[6] in an analysis of the records of necropsies done on children up to the age of 13 years in the hospitals of Stockholm, found 14 duodenal ulcers, four gastric ulcers and one combined duodenal and gastric ulcer. Seventy per cent of these children were in the first year of life. Foshee[7] summarized all cases of gastric ulcer reported until 1932, and with his own, there were 13. The ages of the children ranged

*From the Department of Pediatrics, Carle Memorial Hospital and Carle Hospital Clinic, Urbana, Illinois.

from three months to 14 years. In 1940 Burdick[8] reported ten cases of peptic ulcer in childhood; all but one was duodenal and the ages varied from three weeks to 13 years. Benner[9] reported eight cases of peptic ulcer in patients ranging from the newborn period to 11 years of age. In each instance the diagnosis was made at post-mortem. Ten cases of ulcer were observed at the Babies Hospital, New York, between 1930 and 1944 in patients beween the ages of three months and 12 years.[10] Four of the diagnoses were at autopsy.

Kennedy[11] has classified the ulcers of infancy and childhood in rather distinct groups. In the neonatal period the most frequent symptom is hematemesis or gross melena, particularly the latter. Death may result from hemorrhage or peritonitis, following perforation; however, rapid healing of the ulcer may occur.

A second group of acute ulcers occurs in infants from a few weeks to one year of age. In certain of these infants there are no symptoms and diagnosis has been made at necropsy. Presenting symptoms may be hematemesis, melena, or signs of peritonitis subsequent to perforation. Vague symptoms of dyspepsia and vomiting occur occasionally. The infants with indefinite abdominal discomfort, loose stools, vomiting and dehydration and occasional streaking of the stool or vomitus with blood are often regarded as suffering from gastro-enteritis.

Children from one to nine years of age compose the third group. In this age period the lesions are chronic but the signs and symptoms so characteristic of the condition in adults are rarely present, and diagnosis is usually made at surgery or necropsy. Anorexia, failure to gain and upper abdominal pain with mild tenderness are occasionally observed while night pain, acid eructation, pyrosis and flatulence are uncommon. After ten years of age the peptic ulcer usually assumes the characteristic pattern by which it is identified in the adult.

The etiology of peptic ulcer is a disputed point, but it is probable that certain factors with a role in the etiology of peptic ulcer in adults may function in a similar way in children. Obviously casual agents as alcohol and tobacco are not significant in childhood. The roles of infection, asphyxia and anxiety as causes of ulcer in infancy and childhood are not definitely known. In some two per cent to four per cent of persons with extensive third degree burns of the skin acute ulcers of the stomach or duodenum

appear. These ulcers are sharply outlined and usually do not extend below the submucosa, although perforation has been reported.[12] Many theories of pathogenesis have been proposed, including the liberation of histaminoid substances, but none have been proved. Of 92 such cases collected from the literature, 71 were duodenal ulcers, 16 were gastric ulcers and five were both a duodenal and gastric ulcer.[13]

Duodenal ulcers are usually situated on the posterior wall nearer the papilla than the pylorus. Gastric ulcers, commonly observed on or near the lesser curvature, perforate more frequently than duodenal ulcers. In infancy, ulcers are usually acute with minimal induration or round cell infiltration. The ulcers may be oval or circular and single or multiple in the duodenum or stomach of infants. The ulcer in older children, similarly to adults, is often characterized by a definite crater, an indurated border which is palpable, and hyperemia and stippling of the peritoneal coat. Malignant changes in chronic peptic ulcer of childhood have not been encountered.

From 1934 to 1951 six children with peptic ulcer have been observed by the authors. In each instance the diagnosis was suspected clinically and confirmed by roentgenologic examination. Five were male and one was female, and the ages were nine, nine, four and one-half, four, three, and two years, respectively. Five of the ulcers were duodenal and one was gastric. None of the patients were in the neonatal or newborn groups and all six were in the age period (one to nine years) in which peptic ulcer is reported to occur least frequently. An obstructing pyloric ulcer occurred in the youngest patient, age two years. Among 243 cases of peptic ulcer in children only 22 were noted between the age of two and six years.[1] The ulcer in this youngest patient was possibly initiated or aggravated by the administration of aureomycin. The oldest patient, age nine years and with spastic quadriplegia, sustained a gastric ulcer (Curling's) subsequent to a severe and extensive burn.

CASE REPORTS

Case 1. B. A., female, age four years, was first examined June 22, 1934. The father and mother were well, and she was the oldest of three children. The family history was non-informing, and the patient's only serious illness had been pneumonia at ten months of age.

She was a full term baby, delivered normally, and weighed 3,062 grams. For the first ten months she was breast fed. As an infant constipation was marked. After four months of age she suffered periodic attacks of vomiting without fever and apparently little pain. At 19 months of age an attack of severe vomiting and diarrhea without fever occurred and lasted approximately one month. The episodes of vomiting appeared suddenly without preceding illness and lasted from several days to two weeks. During the first 18 months of life the vomiting ordinarily occurred immediately after feeding.

With increasing age the complaint of abdominal discomfort was frequent. The pain usually occurred at night and would awaken her, but occasionally it started before meals or was postprandial. Relief was obtained on numerous occasions by ingestion of soda, though never by emesis. Administration of milk for the pain was never attempted, but other foods had not relieved the distress. The abdominal discomfort was occasionally associated with emesis. Recurrent vomiting lasted from several days to three weeks, and the interval between episodes was rarely more than a few days. Blood in the vomitus or stools had never been observed. Meat, crackers or other rough, dry foods were not tolerated in the diet. Malnutrition, nervousness and irritability were constant.

Physical examination disclosed a pale, malnourished child. Weight was 27½ pounds, the average normal weight being 38 pounds. Pulse was 128 and rectal temperature 100° F. The tonsils were medium sized and infected and the anterior cervical glands slightly enlarged. Extreme dental caries was present. Examination of the heart, lungs and abdomen was non-informative. Urinalysis was negative. The blood count revealed hemoglobin 60 per cent (Sahli), erythrocytes 3,610,000, leukocytes 8,800 of which 38.5 per cent were lymphocytes, 6 per cent large monocytes and 55.5 per cent neutrophiles. The guaiac test for occult blood in the stools was positive after a meat-free diet of one week. Gastric analysis showed 16 per cent free hydrochloric acid and 29 per cent total acidity. The tuberculin test was negative, as was the blood Wassermann. Roentgenologic examinations of the chest, colon and gall-bladder were negative. Fluoroscopic and x-ray studies of the stomach and duodenum on two occasions disclosed cardiospasm and typical ulcer deformity of the duodenal cap. A modified Sippy diet was

prescribed. Milk and cream were given hourly with alkalis between the feedings; anti-spasmodics were administered regularly. Improvement was immediate, and at the end of one week a bland diet with milk and cream between meals was started. Within the first two and one-half weeks of treatment weight increased one pound, and the parents reported that for the "first time they could remember" she did not complain of abdominal discomfort. Roentgenologic studies ten months after diagnosis showed duodenal ulcer and some duodenitis . Because of recurrent vomiting and roentgenologic evidence of persistent cardiospasm, repeated esophageal dilatation was performed in 1935. Some improvement was noted. In 1943 roentgenologic studies disclosed the esophagus to be negative, but the duodenal ulcer persisted and some gastric retention was present. Surgery was refused on several occasions.

Case 2. D. W., male, age nine years, was first examined May 20, 1939 because of sore throat and abdominal pain. Two months previously bloating and excessive flatus had been noted. Roentgenologic studies elsewhere had shown a "congenital condition", and the patient improved on a prescribed diet free of raw fruit and vegetables. He was nervous, tense, perspired easily and slept restlessly. Physical examination was non-informative.

Roentgen studies of the gastro-intestinal tract showed constant deformity without crater on the lower contour of the duodenal cap. Laboratory studies, including urinalysis, complete blood count and sedimentation rate, were within normal range. The patient was placed on a modified ulcer diet and antispasmodics were prescribed; two months later he was free of symptoms. Roentgen examination in 1939, in 1948 and again in 1951 showed persistent deformity of the duodenal cap, although he rarely complained of abdominal distress.

Case 3. W. R., male, age four and one-half years, complained of abdominal pain of eight months duration when first examined. The pain occurred before meals and during the night. He was a tense, high-strung child and as an infant had been treated for allergic dermatitis. Physical findings were unimpressive, and laboratory studies were essentially normal except for roentgenographic evidence of duodenitis.

Therapy consisted of a bland diet with milk and cream between meals, antacids, antispasmodics and sedatives. Improvement was

marked within a few weeks, although abdominal discomfort has continued from time to time ever since. Re-examination roentgenographically three months later showed less irritability of the duodenal cap, but a deformity at the base of the inferior border of the cap was noted. This was interpreted as an ulcer by the roentgenologist. Similar studies five months later were negative for evidence of duodenitis or ulcer.

There was recurrence of the symptoms three years subsequent to the initial examination. Roentgenologic studies demonstrated

Fig. 1. (Case 4). Note the deformity of the duodenal cap.

recurrence of duodenitis, and an ulcer regime with appropriate diet and medication was resumed. For the two years preceding, upsetting emotional factors had existed in the patient's home. The father had been under constant observation by a psychiatrist, and the mother presented many emotional disturbances and became unduly disturbed over the welfare and health of her children. Fluoroscopic evidence of duodenitis was still present the year following this second admission. This patient has been considered to have had both duodenitis and duodenal ulcer.

Case 4. J. M., male, age three years, was examined on July 11, 1947, and the presenting complaint was "stomach trouble". Vomit-

ing had occurred for several months and abdominal discomfort awakened him in the night. Excessive belching had been observed.

Physical findings were negative except for enlarged, infected tonsils. Laboratory studies, except for roentgenologic examination of the stomach and duodenum, were non-informative. A constant deformity of the upper edge of the duodenal cap was observed; there was no visible crater or obstruction (Fig. 1.). A modified ulcer diet, antacids, antispasmodics and sedation were

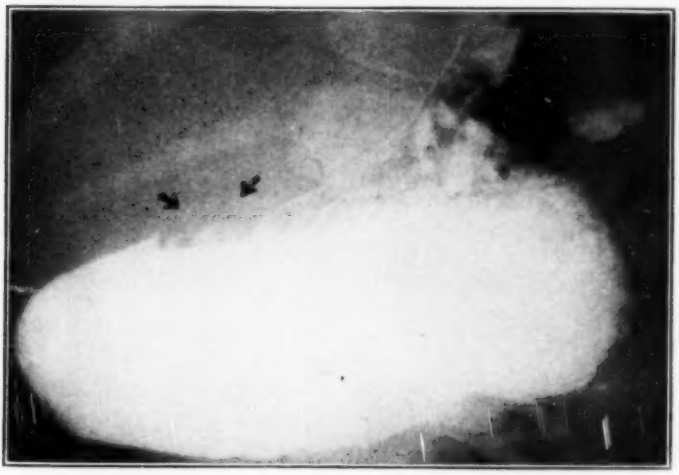

Fig. 2. (Case 5). Note the ulcer crater at the lower portion of the lesser curvature.

prescribed. He had gained two pounds and was relieved of abdominal distress in the subsequent six weeks. He was not observed again until July 1949; there had been recurrence of "stomach trouble" in September 1948, and the mother reported that roentgen studies elsewhere showed evidence of duodenitis and duodenal ulcer. Ulcer diet and therapy had been resumed for four months at that time with complete relief of symptoms.

Case 5. F. S., male, age nine years, first developed symptoms of ulcer subsequent to a severe and extensive burn on the left abdomen and flank area by boiling water. The burn was incurred on June 27, 1948. The patient was a severe spastic quadriplegic and for

one month was treated in his own home in another community. In that period he vomited blood on several occasions. From July 26 to August 20 he was hospitalized in a local hospital where his condition was critical for the first two weeks. After dismissal from the hospital hematemesis and melena occurred frequently.

On initial examination, November 18, 1948, his general con-

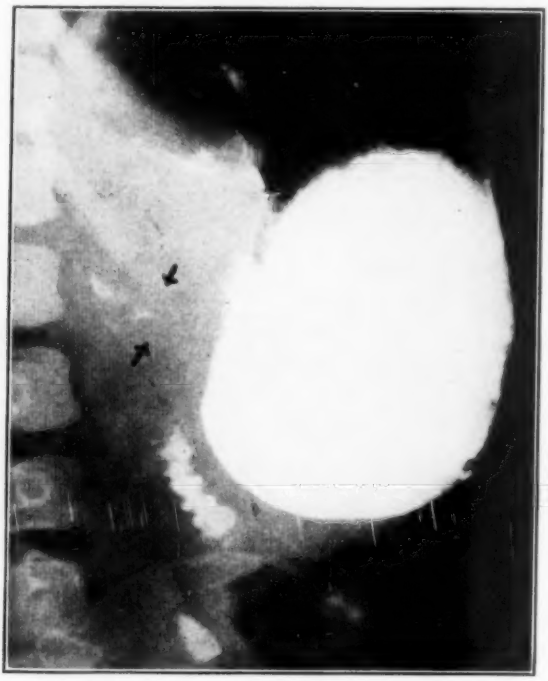

Fig. 3. (Case 6). There is marked narrowing of the pyloric canal with almost complete obstruction.

dition was very poor. He was in obvious pain, vomited occasionally and weighed only 29 pounds. The healing burn over the left abdomen and flank area showed many areas of granulation. Roentgen studies showed a flat ulcer low on the lesser gastric curvature (Fig. 2). A modified Sippy regime with antacids, antispasmodics

and sedatives was prescribed. When observed one month later his mother reported considerable improvement. In January and again in October 1949 he was hospitalized for recurrent hematemesis and melena; on each occasion a transfusion was necessary. Subsequently he had been on an ulcer regime continuously and frequently vomits blood-streaked mucus. His condition remains poor, malnutrition is extreme, and melena occurs occasionally.

Case 6. D. L., male, age two years, was referred on November 22, 1950 because of recurrent, persistent vomiting and dehydration. Improvement had not occurred with intravenous infusions elsewhere. Pharyngitis and cervical adenitis had occurred three weeks previously. He was treated with oral aureomycin and subsequently began to vomit repeatedly. For one week the vomiting was mild and then became of sufficient severity to necessitate intravenous therapy, which was without apparent benefit.

The past medical history was essentially negative, including a complete absence of gastro-intestinal symptoms. He had received aureomycin several times prior to the present illness without untoward symptoms.

Physical examination was not informative except for rather marked dehydration and mild nasopharyngitis. He was afebrile. Laboratory studies, including urinalysis, complete blood count, x-ray of the chest and intravenous pyelogram, were regarded as within normal limits. Repeated intravenous infusions were given on admission, and for three days the vomiting ceased. With recurrence of vomiting roentgenologic studies of the stomach showed almost complete obstruction at the pylorus (Fig. 3); examination 24 hours subsequently disclosed the stomach full of barium.

He was transfused, and on December 1, 1950 under vinethene and ether anesthesia an exploratory laporotomy was performed by Dr. Frank Russ. Through an oblique, subcostal, transrectus incision the dilated stomach was examined. Stippling of the pyloric area for gross inflammation was not evident. Examination of the proximal portions of the duodenum demonstrated no abnormalities. A longitudinal incision was made in the pylorus from 2 cm. proximal to the pylorus to 2 cm. distally and the stomach and duodenum were opened. On the anterior aspect of the pylorus an ulcerated area 3 mm. in diameter with a somewhat fibrous base was noted. A pyloroplasty was effected, and the abdomen was closed.

The postoperative course was uneventful and a normal temperature was maintained. A modified Sippy regime with antacids and antispasmodics was instituted, and he was dismissed from the hospital December 23, 1950. Since dismissal an ulcer regime has been maintained, and he has been free of all symptoms. On March 12, 1951 roentgenologic studies disclosed slight deformity of the duodenal cap; this was regarded as due to the surgery, and there was no evidence of obstruction.

COMMENT

The existence of gastric or duodenal ulcer in childhood may be suspected clinically by the presence of persistent ulcer-like symptoms or chronic recurrent digestive symptoms of a more vague nature. Actual diagnosis, however, requires a surgical or roentgenologic confirmation.

Pain, vomiting and constipation are the most frequently observed symptoms of peptic ulcer in childhood. Hemorrhage, observed rather commonly in patients less than one year of age, was noted only in the patient (Case 5) with Curling's ulcer. Periodicity, night pain and relief by soda bicarbonate or milk were obtained in the histories of several patients. The clinical manifestations of uncomplicated duodenal ulcer in most cases are identical with those of duodenitis, a more superficial inflammatory lesion observed occasionally in childhood and differentiation is made roentgenographically.[14] In two patients (Cases 1 and 3) both duodenitis and duodenal ulcer were observed. The relationship of duodenitis as a possible precursor of ulcer is not known; the lesions may be observed together or independently in adults and children.

Symptoms referrable to the gastro-intestinal tract, in some instances suggestive of peptic ulcer, had been present for periods varying from three weeks to several years prior to observation of these six patients. Case 6, age two years, had no symptoms of the gastro-intestinal tract prior to therapy with aureomycin for an upper respiratory infection three weeks previously. The possible role of aureomycin in initiation of the ulcer or aggravation of a previously existing ulcer is suggested. The complete absence of previous abdominal complaints, the precipitous onset, and the clinical and roentgenologic evidence of pyloric obstruction obscured

the clinical diagnosis of peptic ulcer which was made at surgery. The occurrence of acute, obstructing pyloric ulcers in children of this age group is extremely rare. A gastric ulcer of the pylorus simulating hypertrophic pyloric stenosis in an infant nine weeks of age was reported recently.[15]

In Case 1 cardiospasm was associated with the duodenal ulcer, and the resultant symptoms were persistent and troublesome. Abdominal complaints were present at an early age, and symptoms of ulcer were still noted at the age of 18 years when the patient was observed in the medical department. The typical duodenal deformity on roentgenologic study was still demonstrated in Case 2, 12 years subsequent to the initial examination. Although it was impossible to follow all of the patients for a long period, the impression was gained that persistence or recurrence of ulcer symptoms was common in the children of this group. These observations of chronicity would substantiate the opinion that peptic ulcer in adults may have had onset in childhood.

The failure to obtain satisfactory clinical improvement with adequate therapy in the patient with gastric (Curling's) ulcer was due at least in part to his poor general condition. He was entirely helpless, suffering from spastic quadriplegia and extreme malnutrition. Curling's ulcer of the stomach is considerably less common than the duodenal lesion. Surgical intervention for the recurrent bleeding was not considered in this patient because of his poor general condition.

The observation of six cases of peptic ulcer in childhood would emphasize the importance of considering the possibility of occurrence of these inflammatory lesions at this age period. The rather rare reports of duodenal and gastric ulcer and duodenitis in the pediatric literature suggest that clinicians may not be fully cognizant of the occurrence of these lesions in young patients. Possibly some children with undiagnosed inflammatory lesions of the stomach and duodenum have made an uneventful recovery with or without treatment. It would seem likely, however, that other children with these lesions may be undiagnosed and untreated in the period of onset when proper and adequate therapy would be most effective.

SUMMARY

Five cases of duodenal ulcer and one case of gastric ulcer in childhood are reported, and the literature is briefly reviewed. All diagnoses were made subsequent to roentgenologic studies. The ages of the patients varied from two to nine years, and in at least two instances the lesions and symptoms persisted into young adult life. The possible presence of an inflammatory lesion of the stomach or duodenum should be considered in any child with vague or ulcer-like abdominal complaints.

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THE TREATMENT OF REFRACTORY ASTHMATICS

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A refractory state of a tissue or organ occurs when there is little or no response to therapeutic measures. It may be encountered in other diseases, not necessarily allergic. It may be generalized, as in shock, or localized to any tissue or organ of the body. For example, when the heart or uterine muscles fail to respond to proper therapeutic measures.

In this report we are concerned with the refractory state in asthmatics. In our experience allergic patients, who have disturbed physiologic functions of important glands and vital organs, are most apt to be our "problem patients." The details of these disturbances will be discussed later.

The refractory state in asthmatics can be considered from diagnostic and therapeutic angles. From a diagnostic approach, some such patients do not show positive reactions on testing (even to factors to which they are clinically sensitive) which could indicate the causes for their states of sensitivity, no matter what studies are done. Therefore, a proper diagnosis as regards allergy is impossible. Others do show states of sensitivity by their positive skin reactions to pollen, inhalants, etc., but when specific extracts are made and a specifically outlined course is followed, they still do not improve. Hence, good therapeutic results seem well nigh impossible.

Patients may be refractory to drugs which are used to relieve acute attacks, as well as to drugs or therapeutic measures which are used for general (symptomatic) improvement.

The refractory state is not constant. It may vary in the same individual and change from day to day or from week to week. It depends upon the general well-being of the patient. Everything being equal, under the same environmental conditions and circumstances, with the same drugs and the same diets, they have periods of freedom from asthma alternating with recurring attacks. The very same food that they have always used with perfect impunity

may on occasions precipitate gastro-intestinal distention, with attacks of asthma.

What makes an allergic patient refractory to foods, to drugs or to any therapeutic measures? What organs or structures are involved? For correct and satisfactory answers we can review the recorded pathologic and experimental physiology. This investigation is based on a special study of 48 patients, 30 asthmatics and 18 with perennial rhinitis. The source of material is private practice (A.S.) and the Allergy Department of the Northern Liberties Hospital of Philadelphia, Pa.

Post-mortem studies in asthmatics have been mostly confined to the gross and microscopic pathology of the pulmonary structures.[1-4] Bronchial plugs with organized exudates are frequent post-mortem findings, along with secondary or terminal congestive disturbances, all of which are not necessarily due to bronchial asthma. With a few exceptions, no gross or microscopic pathology has been investigated in the liver, pancreas and similar organs. Many investigators have stated that in chronic infectious disturbances the entire reticulo-endothelial system is involved, including the spleen, pancreas and liver. These vital organs must also have a specific effect on various allergic syndromes, and changes in their physiopathologic relations are partly responsible for the refractory state in some allergic patients.

Further knowledge is needed concerning the hormonal secretions of the above mentioned organs, their influence on each other and on remote vital structures in the body. If one has had the experience of watching a patient with fibrocystic disease of the pancreas, one is surely impressed with its effects on the respiratory and bronchial systems.

Hepatic disturbances, as well as some hyperplasia of the pancreas and spleen may play an important role in the chronic or sporadic occurrence of refractoriness in the allergic.[5] The pathologic physiology of the above mentioned organs may be responsible for the improper utilization of foods and drugs and add, indirectly, to the state of refractoriness.

There is experimental evidence[6-8] that the adrenal glands and the spleen are linked together in a common physiologic function. Any disturbance in the physiologic interrelationship between the

adrenal glands and the spleen may indirectly produce a similar clinical pattern of refractoriness as mentioned above.

Hans Selye[9-11] has demonstrated very well the stress and alarm reaction, especially with reference to the interrelationship of the adrenals and spleen, in experimental animals and suggests a similar response in the human.

A great deal has been published about the extensive involvement of the respiratory tract in fibrocystic disease of the pancreas. Up to date medical reports indicate that 95 per cent of patients with this disease have disturbances, such as chronic bronchitis and constant unproductive cough,[12] as well as inability to assimilate and absorb fats, possibly due to lack of vitamin A. Any abnormal secretory function of the pancreas may also produce pathologic changes in the intestinal and biliary system. Therefore, asthmatics may have gastro-intestinal disturbances from foods not producing any reaction on testing. Many of them also feel much better on fat-free diets.[13] These symptoms resemble in a small degree fibrocystic disease of the pancreas.

There is considerable difference of opinion about the role of the liver in allergy. De La Vega and Mallen[14] could not demonstrate any disturbances in the liver function in allergic patients. On the other hand, many European investigators had a contrary viewpoint. For instance, Widal[15, 16] and his co-workers from the Pasteur Institute in Paris have designed a hemoc'astic crisis test and American investigators used a leukopenic index test.[17] In both instances these tests have been primarily based on the probability that there is a disturbance in the liver function of allergic individuals. Furthermore, hepatic disturbance may interfere with the proper work of the following gastro-intestinal hormones: (1) Secretin (from the stomach). (2) Cholecystokinin (from the gall bladder) and (3) Pancreozymin (from the pancreas).[18] These hormones are very closely related and dependent upon mutual stimulation.

Refractory asthmatics, in addition to respiratory difficulties, have gastro-intestinal discomfort and abdominal distention which is invariably followed by attacks of asthma. Gastro-intestinal and gall bladder studies rarely reveal any organic pathology. Elimination and substitution diets are usually of no benefit. Drugs usually produce gastro-intestinal pain unless administered with benzocain

or other local stomach sedatives. Spirits of chloroform, camphor and peppermint, when given 10 to 15 drops after meals and every hour between meals, relieved distention in some patients. In most instances, however fresh Pancreatin,* from five to 10 grains; Ketocholanic acid* (dehydrocholic acid and other similar products) two grains; desiccated bile salts, three to five grains; all of the above, singly or combined, relieved distention and indirectly relieved dyspnea after meals or week-end asthma and dyspnea from over indulgence.

Gastro-intestinal and liver diseases usually interfere with absorption, storage and utilization of vitamin A and vitamin B complex.[19] Vitamin deficiencies retard or prevent the reconstruction of the epithelium in upper respiratory infections. Any specific or symptomatic medication which will improve an abnormal gastro-intestinal tract may indirectly improve the upper and lower respiratory mucous membranes. This circuit, i.e., gastro-intestinal disease, lack of vitamin A or other vitamins, diseased respiratory mucous membrane, may be one of the keys to the etoliogy of refractoriness in the asthmatic.

A great number of these refractory asthmatics complain of general weakness. Their every effort is usually responsible for exhaustion, dyspnea and asthma. At the same time *no* cardiac pathology could be demonstrated either by the electrocardiogram or any other studies in most of the patients. X-ray and fluoroscopy of the heart and lungs are always within normal limits.

Many refractory asthmatics, even with normal blood findings, have made a remarkable improvement when 15 units of liver extract and 15 m. of vitamin B complex were given intramuscularly three times a week. The very same extracts used for desensitization, to which they did not respond, became effective and they were greatly benefited by the usual therapeutic measures.

Meals containing a normal amount of fats, especially soups, would usually produce a bizarre train of symptoms in addition to asthmatic attacks. These patients on repeated examination had normal sugar and normal blood cholesterol. However, they were greatly benefited on low carbohydrate and fat-free diets. Their

*We want to express our appreciation to the Armour Laboratories of Chicago for supplying us with the Pancreatin for this investigation, also to the American Ferment Co., Inc., of Trenton, N. J., for supplying us with the Ketocholanic acid and bile salts for this study.

symptoms usually cleared off and they improved from gastric distention, dyspnea and wheezing after meals.

It also appeared that some refractory asthmatics had a great deal of disturbances in the electrolytes. Excessive amounts of salt in the diet increased breathing difficulty much more. When these patients were placed on a restricted salt diet, not more than two to three grams per day, a great change for the better invariably took place. The visible mucous membranes were not as boggy nor as swollen and there was less moisture in the bronchial system on examination. It is our observation that when patients are indulging in an excessive amount of salt, the boggy, swollen mucous membranes of the bronchi and nasal mucosa would not improve. Local constricting medications were of no particular value.

One of the striking observations which prompted this investigation was the disappearance of mucopurulent discharges from the respiratory mucous membranes in several asthmatics. Four untractable asthmatics suffered from severe coughing and copious mucopurulent expectoration. Their nasal discharges were just as voluminous. The visible mucous membrane of the nose and throat was covered with a mucopurulent exudate. Local treatment would help but not for long. Antihistamanics, atropine and similar drugs would make them worse. They did not respond to any therapeutic measures, neither to drugs nor to dust, bacteria, mold, or any other desensitization indicated. Daily injections of liver and vitamin B complex was instituted for one week, then every other day for two months. After six weeks of treatment the mucopurulent discharge cleared. It did not return in the course of two years enough to be a problem. There was a rejuvenation of the visible respiratory mucous membrane. Coughing, wheezing and all associated symptoms of bronchitis with moisture in the chest completely improved. They experienced a feeling of well-being with an increase in weight. They began to respond to desensitization and what is more, they began to give local reaction to antigenic extracts to which they did not react before.

COMMENT

When treating refractory asthmatics, it is important to: First, properly regulate the gastro-intestinal digestive system. Second, give general tonic medications to improve the hematopoietic sys-

tem, such as injections of liver, vitamin A and vitamin B complex. Third, keep on low carbohydrate and fat-free diet. Fourth, reduce salt intake to two to three grams per day to balance the electrolytes and reduce the edematous mucous membrane of the body.

The following cases will serve as illustrations:

V.P., age 55, kitchen worker at one of the chain restaurants, first seen (A.S.) 12 years ago with a chief complaint of attacks of bronchial asthma day and night, winter or summer, of ten years duration. Epinephrin sprays were used continuously with very little benefit and he could not walk a half block without stopping to rest.

He was tested with pollen, inhalants, food, dust and bacteria, giving no positive reactions on intradermal testings. He was treated with bacterial vaccines and stock dust desensitization as specific and non-specific therapeutic measures. There was very little response to various drugs. After a year and a half he discontinued treatment. On several occasions he returned for treatment and discontinued each time because of very little improvement. He again resumed treatment in 1947. There was no change in his physical findings, which were: chest full of moist râles, nasal obstruction, excessive nasal discharge, copious greenish-yellow expectoration and marked dyspnea on slightest effort.

Since his last previous return he had had two bilateral polypectomies, two and a half years ago and one and one-half years ago.

He was always undernourished and underweight and complained of general weakness in addition to continued dyspnea on effort. In the fall of 1949 tri-weekly intramuscular injections of 15 units of liver extract and 15 m. of vitamin B complex were given to relieve his general weakness. In the course of four months a spectacular improvement took place. He began to increase in weight, the dyspnea on slightest effort was gradually and slowly improved so that at present he can walk for hours without dyspnea. Nasal and bronchial secretions gradually became less and less so that after six months his nasal and bronchial secretions almost disappeared. There has been no return of nasal polyps and he began to show large local reactions to bacteria and dust on intradermal testing.

Comment. This patient was a most refractory case of bronchial asthma. Constant coughing, expectoration, wheezing, dyspnea on the slightest exertion were combined with general weakness. It was necessary to use epinephrin sprays constantly. After several

months of tri-weekly injections of liver extract and vitamin B complex a transformation to well-being has taken place. He has gained 25 pounds. At present he has no cough, no expectoration, no dyspnea on effort, no nasal discharge and only occasionally from habit, does he resort to epinephrin sprays.

R. P., married, 33 years old, working in a wholesale grocery handling mostly boxed and canned merchandise. Called for treatment 12 years ago (A. S.)

Chief Complaint. Bronchial asthma of 10 years duration. Same winter and summer. On testing she was positive to coffee, dust, staphylococcus, pneumococcus and influenza bacillus, each plus two. After several years of desensitization with autogenous stock vaccine and dust, there was little improvement and she discontinued treatment. She returned in 1947 with a history that for the past seven months she had been practically in status asthmaticus after having had lipiodol installation in the bronchii. She has been hospitalized off and on. After a lapse of seven months the x-ray still showed the presence of lipiodol in the bronchial system. She had been somewhat better of the past month. Where she works a tea and coffee department had been added. The patient noticed that any time she would pass the platform unloading green coffee from Brazil and the rooms for grinding and roasting coffee, it would precipitate severe attacks of bronchial asthma lasting for one to two days.

A 15 per cent dust extract was made from the platform sweepings, containing green coffee dust, and a similar extract from the department of grinding and roasting coffee. A very weak dilution *(0.1 cc. of the concentrated dust to 100 cc. of physiologic salt solution)* was made. On testing she gave a large local reaction (plus four) to each of the extracts. Desensitization was carried on with these two dust extracts on alternating days. She could not be advanced any higher than 0.2 cc. of each. Was treated also with autogenous and staphylococcus toxoid vaccines.

Her improvement was very slow and she was always subject to colds, bronchitis and attacks of asthma. She was highly sensitive to penicillin, to barbital and many other drugs. They would be followed by attacks of asthma, hives, skin rashes and occasional exfoliative dermatitis. She could not take epinephrin but had to resort night and morning to aminophyllin suppositories and other sedation that she could take (bromural, chloral hydrate and

sodium amytal). She would invariably have asthmatic attacks after her meals. Any kind of food, especially fatty foods, such as fatty soups and gravies, would produce gastro-intestinal distention followed by attacks of bronchial asthma.

In January 1950, she was placed on two grains of ketocholanic acid and five grains each of pancreatin and bile salts, after meals, as circumstances may require. The gastro-intestinal distention improved and she was free from attacks of asthma after her meals. In addition to the above, she was getting liver and vitamin B injections twice a week. The attacks of asthma became less frequent and less severe. For the last sixteen months (since March 1950) she has practically been free from asthma. Does not have to resort to aminophyllin suppositories or any other sedation. Passing through the unloading platform and the grinding and roasting shop does not precipitate severe attacks of asthma.

SUMMARY AND CONCLUSION

The refractory asthmatic is a problem for the allergist. All refractory patients apparently are suffering from deficiency in the reconstruction of the bronchial mucous membrane. It may be the result of a direct destruction by acute or chronic infections or, indirectly, by a disturbed digestion and absorption of a poorly functioning gastro-intestinal system. For the last few years we used various therapeutic measures to build up the general well-being of our refractory patients. Injections of large doses of liver extract (either the crude or the refined) with injections of vitamin B complex were given three times a week. A great deal of attention was focused upon correcting any deficiency of the gastro-intestinal digestion. We feel that the above methods helped in the repair of the bronchial mucous membrane.

There were 48 patients of which 30 were asthmatics and 18 perennial rhinitis cases. Eighteen of the asthmatics and 12 of the perennial rhinitis cases have made very satisfactory improvement.

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TOXOPLASMOSIS IN INFANTS. (Monatsschrift für Kinderheilkunde, Berlin, 98: 329, Aug. 1950). Walenz and Westphal observed during the past year eight infants with suspected toxoplasmosis. The diagnosis could not be corroborated in four. Of the four patients with proved diagnosis of toxoplasmosis, three had hydrocephalus, alterations in the cerebrospinal fluid, neurological symptoms and lesions in the eyegrounds. These symptoms were described in the literature as indicative of congenital toxoplasmosis. In the fourth patient, only cerebrospinal fluid changes and chorioretinitis suggested toxoplasmosis. The intracerebral calcifications mentioned in the literature as being characteristic of congenital toxoplasmosis could not be ascertained by roentgenoscopy in these patients. Serologic verification of toxoplasmosis was possible in all four by means of the Sabin-Feldman serum dye test. Examination of blood specimens gave positive titers in all the infants and their mothers. This fact suggests intrauterine transmission. The parasites of toxoplasmosis in two of the infants could be demonstrated either directly from the sediment of the cerebrospinal fluid or after concentration in several animal passages. Although toxoplasmosis may attack any organ, in infants the parasite seems to have greatest affinity for the central nervous system. Various therapeutic methods have proved largely ineffective. Intrauterine death results in many cases in which toxoplasmosis is transmitted from the mother to the fetus. If the pregnancy is carried to term, hydrocephalus and other serious lesions often cause death during early infancy.—*Journal A.M.A.*

LOCAL THERAPY IN DERMATOSES OF THE NEWBORN INFANT*

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In spite of many different attempts at elimination of dermatoses of the newborn infant, no one measure has been uniformly successful. Even if we disregard the minor skin irritations, such as sudamina and miliaria and mild erythematous lesions, we still have to deal with impetigo, intertrigo, furunculosis and other types of the more severe skin infections and irritations.

The minor skin involvements are either transitory or self-limited, and respond favorably to application of a bland oil, lotion or ointment. However, the more significant and extensive skin eruptions and infections are more resistant to ordinary measures. Past employment of special ointments, such as ammoniated mercury ointment, 5 per cent sulfathiazole cream, penicillin ointment, etc. have been discarded by many because of the high incidence of increase of local irritation and sensitivity[1, 2]. Treatments of these dermatoses presents a problem, since other than bland ointments are undesirable because of the nature of the skin of the newborn. It was for that reason that local mineral oil applications to the skin of newborn infants was the recommended procedure by recognized pediatricians. This method we employed for many years. However, the continued occurence of significant skin eruptions and infections in the newborn infant caused us to seek a more effective yet relatively bland and stable local agent.

In addition to the consideration of therapy of dermatological conditions of the newborn infants, it is of considerable importance to determine if any prophylactic measure can be employed to reduce the occurrence of these lesions. This study was, therefore, undertaken to determine the effectiveness of an ointment containing chlorinated cod liver oil, zinc oxide, talcum, lanolin and petrolatum in the prophylaxis and treatment of significant dermatoses in the newborn.

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Aided by a grant from Desitin Chemical Company, Providence, Rhode Island. The preparation used was Desitin Ointment.

There have been numerous reports of beneficial results with the use of an ointment containing cod liver oil[3-13]. Among the many claims, the chief ones were that cod liver oil possesssed bacteriostatic and bactericidal qualities[14-16]; that it decreased the incidence of skin infection in burns and wounds; accelerated the subsidence of infection in infected burns and wounds; and that it expedited the healing of wounds and regeneration of skin tissue in many skin lesions by hastening epithelization.

METHOD OF STUDY

Three nurseries which admitted newborn infants were set aside for the study. The previous routine treatment, e.g., local application of sterile mineral oil, was applied to one-half of the cases; and local applications of Desitin Ointment to the other half. This, also, included the removal of vernix caseosa shortly after birth. The infants were divided into these two groups in strict alternation.

A daily inspection was made of all infants reported by the nurse-in-charge to have a skin eruption, and all infants were examined prior to discharge by the resident pediatrician and a notation made of all skin abnormalities.

Those infants on the "Mineral Oil Routine," who developed a skin eruption, received local therapy with Desitin Ointment, while those already on Desitin, were continued on this routine with more rigorous local application. The reason for the change was that the dermatosis worsened with continuation of the mineral oil routine. In some instances, where significant skin infections set in, other therapy, such as penicillin, etc. was instituted.

A total of 1,295 infants were observed, and included in this study 644 were treated with mineral oil and 651 with Desitin Ointment. The infants were observed for periods ranging from 5 to 12 days, i.e., from birth until discharged from the hospital.

RESULTS

In this series of 1,295 newborn infants, dermatoses of significant degree (excluding the diaper area) occurred in 43 cases—31 cases (72 per cent) in the control or mineral oil group, and 12 cases (28 per cent) in the cod liver oil ointment group. All the cases that developed these eruptions were treated with the Cod Liver Oil

Ointment and responded favorably within 3 to 5 days, as compared with our previous experience with Mineral Oil or Corn Starch Powder or other bland ointments where it took 5 to 10 days to clear up the skin eruption.

Extensive erythematous and papular involvement of the lower abdomen, buttocks and thighs occurred in 25 babies—16 cases (64 per cent) in the control group as compared with 9 cases (36 per cent) in the cod liver oil ointment group. Since the skin condition in the 16 babies in the control group was aggravated by 1 to 2 day continued application of mineral oil, treatment with the cod liver oil ointment was instituted in all these cases. In both groups, the continued and more frequent applications of the cod liver oil ointment led to the disappearance of the rash in 4 to 7 days.

TABLE 1. *The Incidence of Dermatoses in 1,295 Newborn Infants in Relation to the Type of Treatment*

Nature of Skin Lesions	Total Number of Cases	644 Infants Treated with Mineral Oil	651 Infants Treated with Cod Liver Oil Ointment
Significant dermatoses (excluding diaper area)	43	31 cases (72%)	12 cases (28%)
Extensive erythematous and papular eruptions of buttocks, etc.	25	16 cases (64%)	9 cases (36%)
Pustular eruptions	73	40 cases (54.8%)	33 cases (45.2%)

A total of 73 cases of pustular eruptions were noted in the 3 nurseries. Fifty-nine cases occurred in one nursery during a two month period. Thirty cases were noted in the control group and 29 in the cod liver oil ointment group. This unfortunate outbreak was due to other factors which were the cause and source of the infection and therefore operated almost equally in both groups. If one excludes the 59 cases, and considers the remaining 14 cases, then one notes a difference in the 2 groups, e.g., an incidence of 10 cases in the control group and 4 cases in the treated group.

It was necessary to treat 45 cases out of the 73 cases with local therapy of 2 per cent aqueous gentian violet solution and cod liver oil ointment in combination with parenteral penicillin.Twenty-eight (28) babies were treated only with the cod liver oil ointment, and were observed to clear up while still hospitalized. The others cleared up with the use of the cod liver oil ointment plus the other agents. The average duration of the eruption was 5 days with a range of 2 to 10 days.

COMMENT

It it is borne in mind that the skin eruptions in the newborn infants are often due to many factors that operate at the time of birth of the infant or shortly thereafter, and to many local factors, such as sensitivity of the skin to soap and chemicals in the diaper, bed sheets, clothing, etc., as well as urine and fecal irritative effects upon a tender skin, then it is not surprising that cases occurred in the cod liver oil ointment group. However, the lower incidence of non-suppurative dermatoses in the cod liver oil ointment group, e.g., approximately one-third of the total cases as compared to two-thirds in the control group, is significant. In other words, the cod liver oil ointment does have definite preventative or ameliorating properties as far as dermatoses are concerned. Furthermore, it possesses therapeutic value as demonstrated by the fact that its continued use in the evident cases of dermatoses led to the disappearance of the eruption in all cases.

In case of the pustular or infectious eruption, the situation is different, and it is to be expected that such will be the case. The infections occurred within the first 48 hours of the infants' life and it is notorious that newborns are very susceptible to staphylococcic infections. However, in 28 cases out of the 73 cases of pustular eruptions, local treatment with the cod liver oil ointment alone, was sufficient for the control and subsidence of the infection. In the other cases, more specific anti-bacterial measures were necessary. Even in these cases, the continued use of the cod liver oil ointment together with the other agents, not only did not aggravate the local condition, but actually aided in the subsidence and drying up of the pustular lesions.

The cod liver oil ointment was as effective as any of the other local measures used in treating the pustular eruptions.

SUMMARY AND CONCLUSION

1. The special cod liver oil ointment was used routinely for the skin care of 651 normal newborn infants; in the treatment of 43 cases of significant dermatoses exclusive of the diaper area; in 25 cases of extensive erythematous and papular eruptions of the buttocks and thighs; and exclusively in 28 cases of pustular eruptions; and in 45 cases of the more severe and extensive pustular lesions, in conjunction with other therapeutic measures.

2. The special cod liver oil ointment showed definite prophylactic properties in that the incidence of non-suppurative dermatoses in the newborn infant was approximately one-third that of the control group.

3. The special cod liver oil ointment was used successfully in the treatment of both non-infectious dermatoses and various infections of the skin in the newborn infant. It was found to be a soothing, drying and healing ointment. However, in very severe infections of the skin, parenteral penicillin therapy was employed in order not to jeopardize the infant.

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DEAFNESS AND ERYTHROBLASTOSIS FETALIS. (Journal of Laryngology and Otology, London, 64: 720, Nov. 1950). Hazell gives an account of a case of deafness that appears to have been caused by kernicterus at birth. The patient, now aged 19, has one younger and two older sisters. The family history is a classic one of familial jaundice caused by an Rh-positive father and an Rh-negative mother. Since there is no history of deafness in the family and since the patient evidently had kernicterus at birth but did not receive blood transfusions as did her sisters, the conclusion can reasonably be drawn that the patient's deafness was caused by the kernicterus. It is suggested that the deafness is probably due to lesions of the cochlear nuclei, though lesions of the inferior quadrigemina, the internal geniculate body and, possibly, the cerebral cortex cannot be ruled out. The patient's mental age is far below normal, amounting to mental dullness with educational defect.—*Journal A.M.A.*

CHRONIC EDEMA AS SOLE CLINICAL FEATURE OF HEPATIC DISEASE. (Irish Journal of Medical Science, Dublin, 299: 517, Nov. 1950). The case record presented by O'Donovan and his co-workers concerns a boy, aged 15, who had chronic intermittent hypoalbuminemia (as low as 1.1 Gm. per 100 cc.) and edema since early childhood. The other tests for hepatic function gave normal results. A biopsy specimen of the liver showed fibrous perihepatitis with scanty fibrosis in the liver proper. The history, clinical findings and histology of the liver differentiate the case from ordinary multilobular cirrhosis. No such case, so far as the authors know, has been previously described in the literature. They review related cases and suggest that the pathological mechanism in this case was the existence of subscapular fibrosis with compression of the liver in a rapidly growing person. The liver presumably reacted by diminishing the formation of serum albumin to a critically low level while maintaining a relatively adequate function in other respects.—*Journal A.M.A.*

PEDIATRICS HALF A CENTURY AGO

From time to time the Archives, which was the first Children's Journal in the English language, will reprint contributions by the pioneers of the specialty over fifty years ago. It is believed that our readers will be interested in reviewing such early pediatric thought.

GENERAL GONOCOCCAL PERITONITIS IN YOUNG GIRLS UNDER PUBERTY*

Report of Two Cases, One Simulating Appendicitis, Operated.

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These two cases are presented with the hope that they may teach someone else as much as they have taught the writer. Two girls sisters, aged nine and eleven years, acquired vulvovaginitis, developing one week later into peritonitis. The source of infection was a female in the household with whom each occasionally shared a bed. The girls slept together, and it may be that Case B contracted it from Case A, or that both acquired it from the same source. Their symptoms had the same sequence, those of Case B developing regularly one week behind Case A. Case A showed symptoms referable to the appendix, and was operated upon for appendicitis. Both fully recovered.

CASE A. GONOCOCCAL VULVOVAGINITIS; PERITONITIS; SUSPECTED APPENDICITIS; LAPAROTOMY; RECOVERY; GIRL, ELEVEN YEARS OLD

The patient was put to bed for a few days because she was not feeling quite as well as usual. It was then discovered that she had a vaginal discharge. On account of these signs and symptoms a physician was summoned. She seemed to be doing fairly well, under general treatment, with cleansing washes. The condition was such that the physician did not think it necessary to see her the day before, nor did he expect to on the day now to be recorded. She had been ailing one week.

The following is the story of the seventh day: At eleven o'clock the patient, being as well as on previous days, was placed

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in an arm-chair on the balcony, to get the air and to be entertained. It was noted, while she was sitting there, that she seemed to be growing tried; she was put back to bed. At one o'clock, the temperature was 103° F. She felt, as it was reported, "sick." She had abdominal pain, vomited once, had fever and great prostration. The pain was greatest in the right iliac fossa, where she was very sensitive to pressure. The most casual observer would have been struck by her appearance, the death-like pallor and the profound prostration. She was apparently in shock. This latter symptom reminded me of the relaxation, profound prostration, and pallor which I have seen in two infants with intussusception. To very few conditions would Dr. Delafield's favorite and impressive expression, "she looks sick," apply with more force. By three o'clock, the temperature was 104° F. By four o'clock, 104½° F.

To recapitulate, the symptoms were: abrupt onset, pain in abdomen, tenderness most marked in right iliac fossa, moderate abdominal distention, vomiting once, painful micturition, ghastly pallor, marked prostration, extreme relaxation, temperature 104½° F. It may be remarked that all these adjectives are deservedly strong.

The vulvovaginal discharge was thick, creamy, containing intracellular diplococci, decolorizing by Gram's stain, and pronounced gonococci by Dr. G. A. Tuttle. Dr. George Woolsey, surgeon, was called in consultation. He confirmed the findings above. He noted further, rigidity over the appendix, the size of the palm of one's hand, with acute pain on pressure. No mass was made out. Right rectus muscle was rigid; breathing thoracic. Temperature then was 104½° F. In his opinion, there was beginning general peritonitis, due probably to a lesion of the appendix. Dr. Woolsey performed laparotomy six hours from the time the patient was sitting on the balcony and just beginning to be "drooping" and sick.

The following is a memorandum of the operation and a privileged intra vitam examination of the pathological lesions. The operation was intermuscular: small opening; wound closed. A few drams of straw-colored, clear fluid found deep in the pelvis. The peritoneum was red, the vessels distended in a manner to

cause remark by each observer in turn. It was a most striking example of "aborescent injection." The peritoneum seemed just as red as injected vessels could possibly make it; especially was this marked over the cecum. Beyond this extreme injection of vessels, and the few drams of fluid in the pelvic fossa, there was no obvious inflammatory change. It was afterward commented that the membrane was less glistening than usual, a little duller and "sand-papered" though not dry. The appendix was healthy; the tubes and ovaries were not removed. Though the injection of vessels was noted in all the coils of intestines exposed to view, the injection was most marked on the cecum and colon. These last were blood-red.

This condition of the peritoneum would correspond to the description of cellular peritonitis given by Delafield and Prudden, sixth edition, page 521. It is in abstract as follows: Incited by an irritant acting not too long and not too energetically, the entire peritoneum may be congested, but there are no exudates and no other obvious lesion. Minute examination, however, shows a very marked change in the mesothelial (endothelial) cells; they are increased in size and number. The new cells coat the surface of the peritoneum, and project outward in little masses.

The patient recovered without incident; vulvovaginal discharge continued three months in all. After more than a year has elapsed, the nurse, who was in attendance, reports the patient entirely well.

CASE B. GONOCOCCAL VULVOVAGINITIS; GENERAL PERITONITIS, NOT SIMULATING APPENDICITIS, NOT OPERATED; RECOVERY; GIRL, NINE YEARS

This patient, a sister of the first, had been sleeping with Case A, and with the female by whom Case A was probably infected. Cases A and B ran much the same course. Vulvovaginal discharge was noted one week after the beginning of discharge, and about the time of beginning of pain in Case A. She was kept in bed and treated by selected diet, attention to bowels, frequent washings with boric acid solution. The discharge was thick, creamy, containing gonococci, decolorizing by Gram's stain (Dr. George A. Tuttle). At the end of one week she was seized with pain in the abdomen, vomiting, painful and frequent micturition; the tender-

ness and pain referred always to region of the spleen. Pain, sensitiveness, and resistance were over the whole abdomen, but when asked to point to the place of greatest tenderness and pain, she invariably put her finger over the left, upper portion of abdomen. She vomited large quantities, and for many days. Distention slight. The pain was colicky, shifting its location. Everything which increased peristalsis, created rumbling and incited colicky pains. The patient lay much of the time with her knees drawn up, dreading the moment when she must empty her bladder or bowels, putting off these actions just as long as possible. She would sometimes cry piteously for thirty minutes before she could be induced to use the bedpan. The respiration was rapid and thoracic, both sleeping and waking. The chest was examined repeatedly, to exclude pneumonia or bronchitis. Nothing abnormal was discovered. The general appearance of this little nine-year-old was characteristic. In the first place, she was a pure blonde. In the description of peritonitis by the French writers is mentioned a ghastly pallor with algidity. Our nine-year-old blonde was pale, blue, pinched, her nose, hands and feet cold, her nose and lips thin and pinched, her forehead wrinkled, scowling, her face having an anxious or agonized expression, as though about to whimper. She lay on her side, the knees drawn well up, moaning and whimpering. The sympathetic nurse each day spoke of her growing thinner, more "pinched," noted her ghastly pallor, and added: "She looks positively blue at times." The notes speak daily of pains for seventeen days, and occasionally for a longer period. The temperature was irregular, reaching on one occasion, 102.4° F. For more than one week it varied between 101° and 102° F., and for a second week between 101° and 102° F., and for a third week between 99° and 100° F. Vulvovaginal discharge two months. After more than a year, the nurse reports the case entirely well.

These two cases are called here general gonococcal peritonitis. The gonococcus in the discharge was fully established by competent autorities, the 2 cases showing the same, likewise the case from which the two contracted it. The general peritonitis of Case A was established, not only by characteristic outward signs and symptoms, but by operation which allowed of thorough inspection of most of the peritoneal surface. But one proof remains unpre-

sented. We, in our anxiety to have the operation completed during daylight, omitted to take cultures of fluid found in the peritoneum.

As to the connection between the vulvovaginitis and the peritonitis, the presumption amounts to conviction that the infecting agent was propagated thither by way of uterus and tubes. The tubes were slightly inflamed, but their condition did not call for their removal.

In Case B the diagnosis was based on the experience gained in Case A. The two cases were different in but one point—that the pain and greatest tenderness of Case B were referred to the splenic region. After seeing the peritoneal lesion of Case A, there was no thought of operation. On the same basis, and on comparing these cases with those reported in literature, the prognosis was considered good.

In nearly all recorded cases the sudden onset of peritonitis took up the attention of the physicians, and the vulvovaginal discharge was discovered afterward. Frequently the discharge became scanty the moment peritonitis began, and the discharge was discovered quite by chance. Our cases were in bed from the first on regulated diet and were skillfully nursed. This did not save them from extension of the inflammation.

Abrupt onset characterized both cases. Pain and tenderness, prostration and pallor were most pronounced. There were noted, also, pinched features, anxious expression, algidity, rapid thoracic respiration, painful micturition and defecation. From all recorded French cases and from the two above, one gains the impression that there is something characteristic about the picture of ghastly pallor and aligidity, profound prostration and relaxation, which suddenly lays low these young girl patients. They present a picture not easily forgotten: pinched and blue; pale and relaxed; whimpering and flexed.

Comby has published 8 cases collected from the records of Hôpital Trousseau and Hôpital des Enfants Malades (Paris) which deserve to be abstracted in connection with the 2 above cases. (Arch. de méd.d.enf., 4: 513, Sept. 1901).

COMBY'S EIGHT CASES

CASE I. Girl, six years old; scarlet fever; mild course; recovery. Four days after temperature touched normal, vulvo-

vaginitis was discovered. Two days later temperature oscillated between 100.5° and 102° F., with vomiting and abdominal pain, lasting several days. Of this case the writer remarks: "The peritoneum had been only grazed by the gonococcal infection. It is a *peritonism* rather than a peritonitis.

CASE II. Girl, six years; vulvovaginitis; mild peritonitis; recovery.

After six days of intense vulvovaginitis, abdominal pains, greenish vomiting, anorexia, intense thirst, diarrhea, frequent urination, 101.9° F., soon dropping to 100½° F. The case was mild; onset of peritonitis abrupt; recovery early and rapid.

CASE III. Girl, eight years; vulvovaginitis, ephemeral peritoneal attack; recovery. Intense vulvovaginitis; duration not known. Sudden onset; "at eleven o'clock in the morning," complained of pain in the abdomen; at four o'clock temperature was 104° F., followed by copious diarrhea and vomiting. From the following day the temperature began to subside. The pain was more marked in the left flank.

CASE IV. Girl, eleven years old; scarlatina; unrecognized vulvovaginitis; peritonitis; recovery.

Temperature touched nearly 104° F., on four consecutive days, after which it fell. Pains, vomiting. Discharge was discovered after abdominal symptoms began. Infection was thought to have come possibly from use of thermometer or basins.

CASE V. Girl, four years; vulvovaginitis; peritonitis; recovery.

Sudden onset, sharp pains in lower abdomen, fever; vomited after taking tea; diarrhea copious; abdomen distended and painful. Temperature nearly 104° F. After the following day symptoms began to subside.

CASE VI. Girl, eleven years; typhoid fever after defervescence; peritonitis very severe; proposed laparotomy; vulvovaginitis; recovery under medical treatment.

About fifteen days after taking first food, the typhoid convalescent was suddenly taken with headache, fever 102.2° F.; vomiting, first of food, then of bile; sharp pains in abdomen. It was at first thought she had taken too much food. On the following day the condition of the child was grave. The pain was constant, not colicky; an exquisite sensitiveness of abdomen to

the slightest touch. The child was immobile in dorsal decubitus; the legs flexed on the thighs, the thighs on the trunk. The face was pale, anxious, drawn; nose cold and thin, lips blue, tongue foul and dry, extremities cold and cyanosed. The fever at first 100.2° F., became less on the following days, but the pulse remained rapid, 145 per minute. There was no point of special tenderness, none over McBurney's point, no muscular defense, no induration over appendix.

As to diagnosis: general peritonitis, due to what? Perforation in connection with typhoid fever? It seemed rather late (thirty-two days of convalescence). Appendicitis? The signs of localization were wanting. Pneumococcus peritonitis? That must also be taken into consideration. Just then was discovered a vulvovaginal discharge. It was greenish, staining the linen, abundant Gonococcus was verified in the pus. The child's condition was so grave that M. Brun, the surgeon of the hospital, was called. He considered the need of an operation was urgent. This was only deferred to secure the consent of the parents. After two days the temperature had fallen to 99.2° F., pulse 110, no vomiting, abdomen less tense, less painful, general condition better. M. Brun again saw the patient, and no longer advised operation. On the eighth day recovery was assured.

CASE VII. Girl, six and one-half years; severe peritonitis; preparations for an operation in readiness; vulvovaginitis; recovery.

Malaise,-thought to be due to indigestion; vomiting, abdominal pain, most marked in right iliac fossa; passages regular, but scanty. On the fourth day, constipation becoming absolute; generalized pains of whole abdomen. General condition grave; prostration, algidity, cyanosis of extremities, face pale and drawn, temperature 99½° F., pulse small, difficult to count, 140 per minute. Diagnosis—peritonitis; appendicitis eliminated, because of absence of local signs. Vulvovaginal discharge abundant; no gonococcus found in discharge; micturition painful. M. Brun, the surgeon, was consulted as to operation. He advised deferring it, since the patient was near at hand and under close observation. On the fifth day of observation the patient's recovery was assured.

More than five weeks later, the child, while waiting to be sent to the country, a convalescent, was seized suddenly with a second

similar abdominal attack; bilious vomiting, pain without localization: abdomen distended, tympanitic, sensitive everywhere; constipation. However, the tongue was moist, the facies normal, no fever, general condition good, pulse 120. For five days of relapse, her condition remained as above. During the five days only two passages, the first diarrheal, the second induced by enema, brought away material hard and mixed with glairy mucus. Recovery followed. It would seem to the writer that this relapse might be considered purely indigestion and constipation, not peritonitis.

CASE VIII. Girl, six and one-half years; pleurisy; vulvovaginitis; severe peritonitis; recovery.

First symptoms, colicky pains and diarrhea, dorsal decubitus, with relaxation of pressure by flexures of limbs, face pale and anxious, fever 102½° F., pulse 180, abdomen tense, inflated. Pain on examining abdomen, no muscular defense, no dullness, pain not localized.

On the second day, condition more grave, face pale, eyes sunken, dark rings beneath, nose thin, lips pinched and blue, tongue dry and foul, expression of countenance alarming.

Appendicitis was excluded because of absence of all localization. Pneumococcal peritonitis was thought of until it was discovered that there was a purulent vulvovaginal discharge, which stained and stiffened the linen. The discharge was recent and the inciting agent was thought to have been transported on thermometer or basin. Gonococcus was verified; recovery.

ETIOLOGY

Our cases were nine and eleven years old, no evidence of maturing. Comby's cases were four (the youngest), six, six and one-half, eight, ten, eleven, twelve years. Braquehaye reports a case four and one-half years old with laparotomy and recovery. These are the youngest cases found among reports.

Neglected discharges and poor care are considered predisposing causes. Our cases were put to bed at once and in the care of a trained nurse.

Old and recent discharges are followed by peritonitis. In our cases it was just one week from the beginning of the discharge to first pains. These observations are exact.

The gonococcus was identified, by good authority, in three persons in the household. At this day it is not necessary to speak

of the connection between gonococcal vulvovaginal discharge and peritonitis. I have in mind the papers of Dr. H. W. Cushing, of Drs. Hunner and Harris.

It would seem that the mucous membranes of vulvovagina and urethra are the most favorable soil offered by the human body for the growth of the gonococcus. For example, the untidiness of the family toilet was marked and in striking contrast with the street and drawing-room appearance of its members. The sheets and nightdresses were stained and stiffened with discharge, in spite of careful directions and forewarning of the danger to others and as to the infection of the patient's own eyes. As it was, four out of five of the immediate family were infected and always and only on the mucous membrane of the vulvovagina and urethra. The only one to escape was the baby, about two years old, who was kept fairly well separated from the others. Furthermore, the infection of the above described cases was from the sheets or personal contact with a female. It is well to note that there was no question of meddlesomeness of nurse or others.

SYMPTOMS

"The onset of gonococcal peritonitis is absolutely unforeseen and brutal" (Comby). The discharge may be very little or abundant, old or recent, may be overlooked. There are no prodromes. Pain and vomiting suddenly announce the onset. It simulates acute indigestion. The vomiting is at first of food, later bilious. The pain is sometimes moderate and ephemeral, sometimes excessive and lasting. The whole course of the peritonitis may be in accord, may be short and slight or excessive. The abdomen is sensitive to the slightest touch, yet according to Comby there is not usually a sense of muscular defense, no stiffness of the abdominal wall, no localized pain over McBurney's point. In some cases simple grazing of the abdominal wall calls forth cries and groans. The patient seeks to immobilize her abdomen and relax all muscular pressure. The abdomen may be flat or distended. Constipation is often pronounced; it may be absent; diarrhea may be present (rarely) instead. In our cases the abdomen was slightly distended, stiff and exceedingly sensitive to the slightest touch. Gradual pressure produced less pain than one would expect. However, in Case A, there was no doubt in our minds that there was

localized pain and resistance over the appendix. In Case B the severest localized pain was in the splenic region.

In a majority of the cases the temperature abruptly rises to the vicinity of 104° F., after two or three days it drops to 100½° to 102° F., and continues about two weeks. The pulse is rapid and out of proportion to the fever, 140 to 180. The respiration is thoracic and rapid, 30, 43, 48, and once 50 per minute.

GENERAL APPEARANCE OF SEVERE CASES

Facies. Face pale, drawn, anxious, even agonized, nose and lips thin and pinched, cold and cyanotic.

Attitude. Dorsal decubitus; one of our cases lay mostly on her side, knees flexed upon the abdomen. Abdomen distended, stiff, sensitive to slightest touch, and not proportionately so to steadily increasing pressure. Tenderness may be present and localized in right fossa (one of our cases), in splenic region (one of our cases) or in left iliac fossa. (Comby.)

PROGNOSIS

As to life: a large proportion of cases of general gonococcal peritonitis are benign. Comby's cases and my own make 10, all recovering. Three fatal cases are recorded in young children.

As to the conditions left after recovery from the abdominal lesion. In describing the lesions the authors speak of false membrane, sero-pus and clear fluid in the abdomen. Obviously the surviving peritoneum may absorb clear fluid possibly sero-pus, depending on the amount present and its own abilities to take care of the fluids exuded. The presence of false membranes would suggest probable adhesions. The outcome of this pseudo-membranous inflammation is problematical. Our gynecologists may tell us something. The sterile young married woman may be mentioned in their answer. I find it suggested by some writers that a gonococcal seeding and ripening leaves the soil much as it found it. Others maintain that the result of gonococcal infection of the uterus, tubes and ovaries in young girls, under puberty, interferes with the further development of those organs, resulting probably in permanent sterility.

Comby speaks of the peritoneum being grazed with a gonococcal infection resulting in "peritonisme" rather than peritonitis. Such a condition results in sharp onset, moderate symptoms and

ephemeral, subsiding in twenty-four to forty-eight hours. This allows the peritoneum, when there has been no suppuration, to return at once to the normal, recovering its integrity absolutely. Finally, he says, most fittingly and strikingly: "Do not be surprised to see ending rapidly and favorably cases of peritonitis (gonococcal) which have begun in an explosive manner."

With this last sentence I am in full accord, as to Dr. Comby's "peritonisme." I think it well covered by the quotation from Delafield and Prudden under Case A.

DIAGNOSIS

Appendicitis requires first to be ruled out; it is the most common. Pneumococcus peritonitis must be considered, as well as all forms of septic general peritonitis.

The best suggestion I can make is, when a young girl presents abdominal symptoms, having an explosive beginning, examine for vulvovaginal discharge. If gonococcus is identified, defer operation.

TREATMENT

There is nothing new to add. The disease tends to recovery Some, no doubt, require laparotomy. In my cases neither required it. Ice on the abdomen; regular diet; enemata and saline laxatives. Morphin, hypodermically, for excessive pain, or codeia sulphate.

Locally, frequent and effective cleaning and vaginal injections. Thereafter, 1 to 10,000 aqueous solution of bichlorid of mercury; potassium permanganate in aqueous solution. In the French cases "serum" was injected. Whether the serum was an antitoxin is not stated.

DEPARTMENT OF ABSTRACTS

BURNS, E. AND HARVARD, B. M.: COMMON CONGENITAL LESIONS OF THE URINARY TRACT. (Journal American Medical Association, 146:419, June 2, 1951).

Congenital obstructive lesions of the urinary tract are usually encountered at or near the ureteropelvic or ureterovesical junction and at the vesical neck. Because they are frequently multiple, thorough evaluation of the urinary tract is imperative before institution of therapy. No single operative procedure is applicable to all cases of obstruction at the ureteropelvic junction. One may find it necessary to combine two or more methods in order to obtain a good functional result. If the obstruction is bilateral, the side with the greater renal damage should be operated on first and the other side within three months, if possible. For obstruction at the ureterovesical junction, involving only the mucosa, transurethral resection of the resulting intravesical cyst is usually sufficient, although in children suprapubic excision is frequently required. For obstructions involving the entire wall, which, in our experience, have been encountered only in children, ureteral meatotomy has proved successful in our hands. Obstructions at the vesical neck must be relieved promptly before irreversible damage takes place. The authors prefer the modified retropubic approach for removal of these obstructions, although the transurethral approach may be employed. Exstrophy of the bladder is an obvious lesion which is treated by transplantation of the ureters into the rectosigmoid, removal of the bladder and correction of the associated hernia, and plastic repair of the penis. Of the three types of hypospadias, glandular hypospadias, when the orifice becomes stenosed, requires simple meatal dilatation or meatotomy unless severe chordee is present, in which case it is necessary to convert it to a penile hypospadias, which is treated accordingly. For penile and scrotoperineal hypospadias, treatment consists of surgical correction of the chordee followed by construction of the new urethra. The authors prefer the Denis Browne technique for this purpose, because it is simple and easy to perform, is capable of completion in the preschool age and has a relatively short postoperative course. Epispadias can be corrected by this same technique.

MICHAEL A. BRESCIA, M.D.

KEITH, J. D. AND NEILL, C. A.: RHEUMATIC FEVER TREATED WITH CORTISONE AND ACTH. (Canadian Medical Association Journal, 64:193, March 1951).

Twenty-three cases of rheumatic fever were treated with ACTH or cortisone. Fever and arthritis were promptly relieved; the sedimentation rate was brought to normal in most cases in 3 weeks; the children gained on an average of 1½ pounds a week while on such therapy; gallop rhythm frequently disappeared; nodules disappeared in 3 cases in approximately 3 weeks; choreiform movements ceased in 3 weeks in 4 cases; there was usually an appreciable rise in hemoglobin and hematocrit during treatment. There was no significant change in heart murmurs. Changes in heart size were not significantly different from those seen in children treated with bed rest and salicylates. The sedimentation rate frequently rose after hormone therapy was stopped, but usually the rise was transient. In other cases the hormone had to be restarted for a further interval. Patients with chronic heart failure were not improved by such therapy and in one case the failure became more marked during treatment. Two cases of acute heart failure in the first attack of rheumatic fever were quickly and dramatically improved when hormone therapy was begun.

AUTHORS' SUMMARY.

WYATT, O. S.: INTESTINAL OBSTRUCION IN THE NEWBORN AND THE INFANT. (Journal American Medical Association, 146:236, May 19, 1951).

A newborn infant who has not passed meconium and vomits everything undoubtedly has an intestinal obstruction of some type. The most frequent type of obstruction met with in the newborn is hypertrophic pyloric stenosis. This condition usually manifests itself the second or third week of life and is characterized by projectile vomiting, visible gastric peristalsis and palpable pyloric tumor. Duodenal and small bowel obstruction are met with not too infrequently in the newborn. The diagnosis should be made in the first 48 hours of life. Vomiting and lack of meconium are usual. If an atresia is present, no meconium shows on the diaper and a rectal swab gives a negative Farber test. If the condition is stenotic in nature, small amounts of meconium are present and Farber's test is positive. A flat plate of the abdomen will clinch

the diagnosis. Absence of gas in the colon after nine hours indicates small bowel obstruction. After the first few weeks of life, acute intussusception is the most frequent type of intestinal obstruction. Sudden intermittent abdominal pain ushers in the attack. Violent onsets will produce shock quickly; however, if the pain is moderate or mild, no shock will be present. Fully 50 per cent of the infants with intussusception do not present shock. Within a few hours after the onset blood and mucus will be passed by rectum. Abdominal examination will usually reveal a mass.

MICHAEL A. BRESCIA, M.D.

BRADLEY, C.: BEHAVIOR DISTURBANCES IN EPILEPTIC CHILDREN. (Journal American Medical Association, 146:436, June 2, 1951).

Behavior disturbances fall into two general groups. First, there are those which are direct expressions of disordered cerebral function, just as are the convulsions themselves. Secondly, there are behavior symptoms indirectly associated with the basic disorder which represent the patient's personal reaction to being ill as well as to the way his illness is regarded by those about him. There are five traits which characterize the primary (direct) behavior disturbances. (1) Erratic variability in mood and overt behavior implying an apparently unprecipitated, purposeless fluctuation in social adaptability occurring at longer or shorter, and usually irregular intervals. (2) Hypermotility refering to gross motor activity, more extreme or more constant than is usually seen in other children of comparable age. (3) Irritability and irascibility relating to the relative ease with which some persons become impatient, angry, or aroused to aggressive, hostile, vindictive activity. (4) Distractibility refering to a child's inability to concentrate, to apply himself continuously to a task or a matter of interest. (5) Selective difficulty with mathematics in the school work. The secondary behavior disturbances may concern themselves in the epileptic child as a dread of the seizures themselves. Or in other children, the parents, who must inevitably be concerned about the seizures, may communicate their anxiety to the patient and thus aggravate whatever concern is already disturbing his emotional equilibrium. Unfortunately, public attitudes toward seizures and their victims are in many quarters unenlightened, and many

epileptic children are being excluded from activities in which they could profitably engage. Such restrictions in some instances stimulate compensatory behavior reactions that may be a problem for the patient or his family. MICHAEL A. BRESCIA, M.D.

BOYD, H. AND HELFRICK, F.: CELIAC DISEASE TREATED WITH POLYOXYETHYLENE SORBITAN MONOOLEATE. (Journal of Pediatrics, 38:493, April 1951).

A child is reported who had typical and severe celiac disease. This was treated with unusual success by the simple addition to her meals of PSM in the ratio of 40 mg. of PSM to each gram of ingested fat. The use of this emulsifying material permitted her to eat a normal full diet and to live in a state of complete remission until spontaneous recovery from the disease took place. A second child has also been enabled to enjoy complete clinical remission while taking PSM, although she still depends upon its regular use. We suggest PSM as an aid in treating celiac disease.
AUTHORS' SUMMARY.

CARTER, C. O. AND SAVAGE, T. R.: PYLORIC STENOSIS IN FOUR FIRST COUSINS. (Archives of Disease in Childhood, 26:50, Feb. 1951).

There is evidence that genetic factors play some part in the causation of pyloric stenosis. Identical twins appear to be more often both affected than fraternal twins of like sex, and the incidence in brothers and sisters of children with pyloric stenosis is higher than in the general population. A family of 11 brothers and sisters is presented, five of whom have had children, and of these four have had a child with pyloric stenosis in which the diagnosis was confirmed at operation. This family provides additional evidence that genetic factors are in part responsible for the condition. Also, it suggests that if a recessive gene of incomplete manifestation is at work then a high proportion of the population must be carriers. AUTHORS' SUMMARY.

BOOK REVIEWS

MATERNAL CARE AND MENTAL HEALTH. By John Bowlby, M.D. Special Number of the Bulletin of the World Health Organization. Vol. 3, pp. 355 to 533. Paper. Price $1.50, 1951.

The author who is director of Child Guidance Department, Tavistock Clinic, London, has written an excellent paper on maternal care especially considering the effects on the future mental health of the children. The paper is in two parts, the first of which considers the adverse effects of maternal deprivation. This subject is elaborated by a discussion of the origins of mental ill-health, reviewing the evidence on the effects of deprivation and research into the effects of deprivation. The second part of the paper concerns itself with the prevention of maternal deprivation. The chapters of the second part are titled The Purpose of the Family, Causes of Family Failure in Western Communities, with special reference to Psychiatric Factors, Prevention of Family Failure, Illegitimacy and Deprivation, Substitute Families—Adoption and Boarding-Homes, Group Care, Care of Maladjusted and Sick Children and Administration of Child Care Services and Problems for Research.

MICHAEL A. BRESCIA, M.D.

MANAGEMENT OF CELIAC DISEASE. By Sidney V. Haas, M.D. and Merrill P. Haas, M.D. Cloth. Illustrated. Pp. 188. Price $5.00. Philadelphia: J. B. Lippincott Co., 1951.

This book is an excellent monograph covering the subject of celiac disease. The authors include a succinct analysis of the controversial aspects of the etiology, pathology, symptomatology, diagnosis and treatment of this disease. The literature is extensively reviewed and the book contains a bibliography of over 600 references. The etiology of this condition is still unknown. However, the authors submit an interesting hypothesis. This is that the intestines convert the polysaccharide into an irritant substance, possibly an anthroquinone instead of normally breaking it down into two molecules. This conversion might be aided and abetted by a still undetermined microbe. The treatment advocated by the authors after a wide experience with the disease is quite definite. It is a diet from which polysaccharides are excluded so far as

possible. They have had signal success with their specific carbohydrate diet when adhered to for a year to 18 months.

MICHAEL A. BRESCIA, M.D.

HANDBOOK OF PEDIATRIC MEDICAL EMERGENCIES. By Adolph G. De Sanctis, M.D. and Charles Varga, M.D. Cloth. Illustrated. Pp. 284. Price $5.00. St. Louis: C. V. Mosby Company, 1951.

This is a practical and handy book to have available by every physician and certainly would be a valuable asset as part of the equipment of all hospital emergency clinics. The first section of the book is devoted to the more common emergencies that one might meet and the treatment, outlined in clear and concise language, is lucid. The second section of the book is concerned with some procedures which are used in infants and children. No mention is made of PAS in the treatment of tuberculous meningitis, nor is ACTH mentioned in the treatment of Waterhouse-Friderichsen syndrome, asthma and burns. However, this can be easily included in a future volume if their use in these diseases continues to prove of value. The appendix at the end of the book, giving the common commercial names and the poisonous contents of many household items, is of value as a quick reference. The reviewer was glad to note that x-rays of the skull are best deferred in head injuries since x-rays of the skull rarely influence the course of treatment. The illustrations and instructions given for obtaining blood from the internal jugular vein are not very clear, inaccurate and seem an impractical method. MICHAEL A. BRESCIA, M.D.

FROM A DOCTOR'S HEART. By Eugene F. Snyder, M.D. Cloth. Pp. 251. Illustrated by cartoons. Price $3.75. New York: Philosophical Library, 1951.

This book comprises the reflections of a physician, a refugee from the turmoil of Europe, who came to this country in 1940 and worked many years without taking time for a rest. When he did decide to take a vacation he suffered a coronary occlusion. Lying in the horizontal is apparently conducive to a review of one's past and one's follies. The author uses the stratagem of conversation in the sick room between his teen-age son, wife who is also a physician and himself. This book would have been of much more value if the author had stressed more the feelings and

mental gyrations of one who is active and finally is made to rest. The use of the teen-age son to ask searching questions as to the etiology, pathology, diagnosis and treatment of cardiovascular diseases is unrealistic and at times quite boring. The author shows a great deal of hindsight in giving advice regarding properly spaced vacations, etc. However, this admonishment was given to us in the bible by St. Luke—"Physician, heal thyself." There are two very brief anecdotes of the author's early life in Europe. These anecdotes are packed with drama and show promise of an interesting biography. However, the book under discussion, regardless of the sincerity of the author, does not have much to recommend it.

MICHAEL A. BRESCIA, M.D.

PEDIATRIC ALLERGY. By Robert Chobot, M.D. Cloth. Pp. 284. Price $4.50. New York: McGraw-Hill Book Company, Inc., 1951.

As the author states in the preface this book has been written for the student taking a course in pediatric allergy, and for the pediatrician and general practitioner, in the hope that it will enable them to diagnose and treat allergy in children with a greater degree of success. The book is written simply and makes easy reading. But at the same time contains many points of immediate interest presented in such a manner as to be easily absorbed. The author notes that in dealing with an allergic child, no diagnostic procedure is as important as taking a complete and careful history. Heredity plays no role in induced allergies, however, the spontaneous allergies are marked by a hereditary tendency. The author places a great deal of importance on the eradication of foci of infection in treating the allergic child and even recommends tonsillectomy, when indicated, as early as the age of 14 months. This latter recommendation might be subject to controversy. Foods are a common cause of asthma in infancy, but after the age of 4 or 5 years food sensitivity undergoes spontaneous involution in about 98 per cent of the cases. Few children remain food sensitive into adolescence. The foods that most commonly cause allergy in children include milk, eggs, fish, tomatoes, oranges, chocolate, nuts and pork. In infancy, milk and eggs are the most frequent offenders. Pollen sensitivity, which includes house dust, molds, wool, feathers, animal danders, orris root and seeds, such as flax, kapok

and cottonseed, is one of the commonest causes of allergy in children. It usually appears after the fifth year but may occur at an earlier age. The author notes that the antihistaminics are of no value in asthma, their only benefit being one of sedation. Aspirin should be avoided altogether in asthmatic children.

MICHAEL A. BRESCIA, M.D.

DISEASE DUE TO CAT SCRATCHES. (Semaine des Hôpitaux de Paris, 26: 1895, May 30, 1950). Debré and co-workers report 12 cases of subacute adenitis in five young adults and seven children between the ages of 5 and 16 years. Suppuration resulted in 11 of the 12 patients, and healing without cicatrization occurred in all. The disease had a febrile course in some instances, particularly in the adults. It has not been described previously. The term "disease due to cat scratches" was suggested by the authors, because as a rule the disease occurred in children who played usually with cats and were scratched repeatedly by them. The incidence of the disease was higher in rural districts than in cities. Cases were observed in various regions of France and by Foshay in Cincinnati. A small maculovesicular lesion preceding the adenopathy was detected in five patients and was considered as the point of entrance of the infection. The seat of adenopathy varied with cervical, submaxillary, axillary, inguinal and epitrocheal lymph nodes involved; except for two children a single lymph node was involved in each case. Biopsy of the involved lymph node was performed and microscopic examination revealed characteristic nodules composed of reticular cells with epitheloid aspect. The center of the nodules showed a tendency to necrosis. An erroneous diagnosis may be made frequently in such a case. Bacterial infection, mycosis, spirochetosis, an abnormal type of venereal lymphogranuloma and tularemia were excluded. The intradermal reaction obtained with homologous antigen was positive in all 12 patients, even many years after recovery, while it was negative in control persons. The local reaction to the intradermal injection of the antigen may be associated with a general and a focal one which add to the specific value of the reaction. Aureomycin was the only drug which seemed to hasten the recovery.—*Journal A.M.A.*

Medal of Honor

Private First Class Melvin Brown, of Mahaffey, Pennsylvania—Medal of Honor for valor in action near Kasan, Korea, September 4, 1950. Stubbornly holding an advanced position atop a wall, Pfc. Brown stood off attacking North Koreans until all his rifle ammunition and grenades were gone. When last seen he was still fighting—with only an entrenching shovel—rather than give up an inch of ground.

Never forget the devotion of Melvin Brown!

Now, this very day, you can help make safer the land he served so far "above and beyond the call of duty." Whoever you are, wherever you are, you can begin buying more . . . and more . . . and more United States Defense* Bonds. For every time you buy a bond you're helping keep solid and stable and strong the country for which Private Brown gave everything he had.

And remember that *strength* for America can mean peace for America—so that boys like Melvin Brown may never have to fight again.

For the sake of Private First Class Melvin Brown and all our servicemen—*for your own boy*—buy more United States Defense Bonds—now. Defense is your job, too!

Don't forget that now every *Series E Bond* you own automatically goes on earning interest for 20 years from date of purchase instead of 10 as before. This means, for example, that a Bond you bought for $18.75 can return you not just $25 but as much as $33.33! For your country's security, and your own, buy U. S. Defense Bonds now!

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